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RESEARCH MEMORANDUM

A-SCHOOL ATTRITION: REASONS AND RESULTS

Patricia E. Byrnes Alan J. Marcus



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- Enclosure (1) is forwarded as a matter of possible interest.
- 2. Navy A-school training provides the basic skills necessary for new recruits to become qualified in their ratings. Not all students successfully complete the A-school pipeline they start. This research memorandum examines the reasons for attrition and provides some preliminary evidence on the effectiveness of reclassifying those students.

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A-SCHOOL ATTRITION: REASONS AND RESULTS

Patricia E. Byrnes Alan J. Marcus

Navy-Marine Corps Planning and Manpower Division



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ABSTRACT

Navy A-school training provides the basic skills necessary for new recruits to become qualified in their ratings. Not all students successfully complete the A-school pipeline they start. This research memorandum examines the reasons for attrition and provides some preliminary evidence on the effectiveness of reclassifying those students.

EXECUTIVE SUMMARY

Navy A-school training provides the basic skills necessary for new recruits to become qualified in their ratings. Three-quarters of all recruits proceed directly from recruit training to A-school. The Navy makes a substantial investment in A-school training. In 1987, for example, Navy students spent more than 25,000 man-years in A-school. Not all students successfully complete the A-school pipeline they start. In technical ratings, failure rates have been estimated to be about 30 percent. This research memorandum examines the reasons for attrition and provides some preliminary evidence on what happens to students who leave A-school training prematurely.

This analysis first examined Navy A-school attrition data. These data allowed for cross classification of A-school attrition by reason (academic and nonacademic) and by the anticipated disposition of the student (reclassified into another school, sent to the fleet, or left the Navy). Table I illustrates these data for FY 1983. From these data and the other years examined, the analysis revealed that:

- About half of A-school attrition is for academic reasons, and this proportion has been increasing in recent years.
- Most nonacademic attrition is the result of motivation and disciplinary problems.
- Among students who leave A-school prematurely, fewer than 10 percent are recommended for discharge; one-quarter are reclassified for another rating, and the remainder return to the fleet.

TABLE I

A-SCHOOL ATTRITION BY REASON AND ANTICIPATED DISPOSITION, FY 1983

Number of cases: 10,585

	Total	Anticipated disposition (percent)			
	cases (percent)	Fleet	Discharge	Reclassified	
Academic	50.8	67.8	0	32.1	
Nonacademic Motivation and discipline Admin, medical, and other	29.3 19.8	78.5 53.2	13.2 27.0	8.3 19.7	
Total	100.0	68.2	9.2	22.7	

The training data are limited because they show only the anticipated disposition of A-school failures and not actual outcomes for those recruits. For a more complete understanding of what happens to these recruits, a second data source was used. Recruits in FY 1983 who received specific school guarantees (promises of training in a specific rating) were observed for 30 months. The data indicate that a significant proportion of recruits eventually receive ratings other than the ones they were originally promised. The patterns across ratings and entry programs indicate that students who fail to complete A-school training in a specific rating are reclassified to other pipelines. More detailed analyses are necessary to evaluate the success of recruits who are reclassified and the effectiveness of reclassifying students that fail.

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INTRODUCTION

Navy A-school training provides the basic skills necessary for new recruits to become qualified in their ratings. Three-quarters of all recruits proceed directly from recruit training to A-school. A-school pipelines can include from one to six separate courses and range in length from 40 days to more than one year. The Navy makes a substantial investment in A-school training. In 1987, for example, Navy students spent more than 25,000 man-years in A-school.

Not all students successfully complete the A-school pipeline that they start. In technical ratings, failure rates are about 30 percent [1]. This research memorandum examines the reasons for attrition and provides some preliminary evidence on what happens to students who do not complete A-school training in a specific rating.

DATA

Students' progress or attrition from the A-school training courses was analyzed using the Navy Integrated Training Resource Administration System's (NITRAS) Student Master File (SMF). The SMF accounts for students from the time of arrival at the training activity to departure. Whenever a change in a student's status occurs (e.g., he arrives at the training activity, enters a course, or instruction is interrupted), a three-digit Student Action Code (SAC) explaining the change is entered in the SMF. Upon completion of a course, all students are awarded a graduation transaction SAC (GRATSAC). All students who pass a course are awarded the same SAC, P1*. Those students who do not pass, receive a SAC that indicates the reason the course was not completed and the recommended disposition of the student.

Table 1 displays all the possible graduation transaction SACs and the frequency with which they occurred for all A-school courses in 1985. They fall into three basic categories. Successful completion of a course is noted by SAC code P1*. This code accounts for 92 percent of all SACs in 1985 A-school courses. SACs indicating attrition fall into

^{1.} The others go directly to the fleet after a short apprenticeship training course and either become rated through on-the-job training, remain unrated, or, occasionally, return to A-school at a later date.

^{2.} See [2] for a more complete description of the SMF.

^{3.} A complete description of all SAC codes can be found in section E.2.8 of [3]. Parts of that section describing the codes are reproduced in the appendix.

^{4.} The overall attrition rate from A-school courses is only 8 percent. A-school pipeline attrition rates can be much higher, over 30 percent in highly technical ratings. The reasons the course and pipeline rates differ are because A-school pipelines are generally a sequence of courses.

TABLE 1
A-SCHOOL GRATSAC FREQUENCIES, FY 1985

Valid cases: 135,238

Value	Frequency	Cumulative percent	Value	Frequency	Cumulative percent
KAA	1,202	1	LLE	57	7
KAB	1	1	LLF	6	7
KAC	632	1	LLK	112	7
KAK	1,925	3	LLL	57	7
KAL	18	3 3 4	LLM	4	7
KAM	1,177		LNA	100	7
KCD	50	4	LNB	46	7
KCF	60	4	LNC	2	7
KCK	155	4	LND	44	7
KCM	160	4	LNF	165	7
KEA	774	5	LNP	155	7
KEB	1	5 5 5 5 5 5 6	LNX	442	8 8 8 8 8 8 8 8 8 8 8 8 8 8
KEC	98	5	LNY	218	8
LGA	203	5	LNZ	54	8
LGB	42	5	LQA	12	8
LGC	4	5	LQB	30	8
LGD	1,095		LQC	2	8
LGE	14	6	LQN	283	8
LGF	14	6	LQP	202	8
LGG	784	6	LQQ	54	8
LGH	7	6	LSB	21	8
LGJ	34	6	LUR	183	8
LJD	101	6	LZA	100	8
LJE	12	6	LZB	29	8
LJF	84	6	LZC	26	8
LLD	322	7	P1*	123,86 7	100

SOURCE: NITRAS Student Master File, FY 1985.

two categories. Those beginning with the letter K describe attrition for academic reasons; an L indicates attrition for nonacademic reasons. For A-school courses, slightly over half of the attrition in 1985 was for academic reasons.

REASONS FOR TRAINING ATTRITION

The second and third digits of the SAC give more detailed information on the reasons for attrition and on the student's anticipated disposition. Table 2 gives one classification of the SAC codes. Three classes of attrition and three classes of disposition are used to group students. The attrition types are: academic; nonacademic (motivation and discipline); and nonacademic (administrative, medical, or other). Following attrition from a course, a student can be reassigned to the fleet for duty, reclassified and assigned to another course, or recommended for separation from the Navy.

TABLE 2
CLASSIFICATION OF SAC CODES

	Fleet	Discharge	Reclassification
Academic	KAA	KAB	KAC
	KAK	KAL	KAM
	KCD	KCE	KCF
	KCK	KCL	KCM
	KEA	KEB	KEC
Nonacademic			
Motivation and discipline	LGA	LGB	LGC
·	LGD	LGE	LGF
	LGG	LGH	LGJ
	LLD	LLE	LLF
	LLK	LLL	LLM
	LNA	LNB	LUR
		LNP	LNC
Admin, medical, and other	LND		LNF
	LNX	LNY	LN2
	LJD	LJE	LJF
	LQA	LQB	LQC
	LQN	LQP LSB	LQQ
	LZA	LZB	LZC

The proportion of students in FY 1985 who fell into each of the three categories of attrition reasons are displayed in table 3. The anticipated disposition of students in each category are also displayed. Most of the students who fail (68 percent) are reassigned to the fleet. Just under 25 percent are reclassified, and 8 percent are discharged. There are some apparent differences in student disposition by attrition reason. Virtually none of the students who failed for academic reasons were recommended for separation. About 34 percent were expected to be reclassified and sent to another school. The majority, however, were expected to be reassigned to the fleet.

TABLE 3

A-SCHOOL ATTRITION BY REASON AND ANTICIPATED DISPOSITION, FY 1985

Number of cases: 11,371

	Total	Anticipated disposition (percent)			
	cases (percent)	Fleet	Discharge	Reclassified	
Academic	55.0	65.7	3.0	34.0	
Nonacademic Motivation and discipline Admin, medical, and other	28.5 16.5	80.7 52.3	11.7 27.2	7.6 20.5	
Total	100.0	67.7	8.0	24.3	

Students who failed for nonacademic reasons fell into two major categories. Roughly three-fifths of nonacademic attrition was the result of motivational or disciplinary problems. The rest was due to administrative or medical reasons. A significant number of students who left for nonacademic reasons (17 percent) were recommended for separation. This proportion is even higher among those who left for administrative and medical reasons. More students who left for academic than for nonacademic reasons were expected to be reclassified and sent to other schools. This number was also higher for those leaving due to administrative and medical reasons than for those with behavioral problems.

The attrition reasons observed in 1985 can be compared to those for earlier years. Tables 4 and 5 display the distribution of attrition reasons and anticipated disposition for FY 1983 and FY 1981, respectively. The basic pattern in all three years is similar.

TABLE 4

A-SCHOOL ATTRITION BY REASON AND ANTICIPATED DISPOSITION, FY 1983

Number of cases: 10,585

	Total	Ant	Anticipated disposition (percent)			
	cases (percent)	Fleet	Discharge	Reclassified		
Academic	50.8	67.8	0	32.1		
Nonacademic Motivation and discipline Admin, medical, and other	29.3 19.8	78.5 53.2	13.2 27.0	8.3 19.7		
Total	100.0	68.2	9.2	22.7		

TABLE 5

A-SCHOOL ATTRITION BY REASON AND ANTICIPATED DISPOSITION, FY 1981

Number of cases: 10,994

	Total	Ant	nticipated disposition (percent)			
	cases (percent)	Fleet	Discharge	Reclassified		
Academic	44.1	62.6	0.2	37.2		
Nonacademic Motivation and discipline Admin, medical, and other	38.7 17.3	73.8 60.9	11.9 28.3	14.2 10.7		
Total	100.0	67.0	9.6	23.9		

One trend is apparent in the tables. The proportion of attrition due to academic failure increased significantly between 1981 and 1983 and again in 1985. This finding is consistent with [1], which indicated that academic attrition rates increased over this period and that non-academic attrition declined slightly. Evidence from more recent years needs to be analyzed to determine if this is a continuing trend.

The distribution of GRATSAC codes provides information on attrition rates and reasons for personnel failing A-school courses, but it does have limitations. The codes show only the anticipated disposition of students who left A-school and not actual outcomes for those students. The failure codes do not indicate, for example, whether the students have failed previous courses, where in a pipeline the attrition occurs, or whether reclassified academic failures are successful in later courses. Some students who are returned to the fleet for duty may be far enough along in a pipeline to be designated in a rating; others may be assigned as general detail personnel.

FIRST-TERM SUCCESS

This analysis examined a second data source to provide a more complete understanding of what happens to recruits who leave A-school prematurely. In particular, these data help address the effectiveness of reclassifying students who fail.

Recruits in FY 1983 for whom specific school guarantees (promises of training in a specific rating) could be identified were observed for 30 months. Tables 6 and 7 present data on the survival rates of these recruits by rating and quality. Quality is measured by mental group category and educational status. Table 6 displays results for recruits entering the Navy with a four- or five-year obligation. Table 7 contains results for recruits who enlisted in the Advanced Technical Field (ATF) or Advanced Electronics Field (AEF) programs. These recruits incur a six-year service obligation in return for longer and more advanced training.

For each rating and quality category, the number of recruits entering and surviving through 30 months is displayed. Of those surviving, the number of entrants who earned the promised rating, some other rating, or were not rated after 30 months are shown. The proportion of original entrants falling into each category is displayed as well.

Table 6 begins with the survival and advancement patterns for all recruits with four- and five-year obligations. The key factor influencing survival is high school diploma status. Survival is about 80 percent for high school diploma graduates (HSDGs) in all mental group categories, although it does decline slightly for the lower mental groups. The survival rate for nongraduates is 20 percentage points lower.

TABLE 6

SURVIVAL AND ADVANCEMENT RATES, FOUR-AND FIVE-YEAR OBLIGATION (At 30 months), FY 1983

HSDG ◆	1636 1.66 776 8.75 651 6.63 36 6.64 89 6.69	48 1.66 37 6.77 6 6.66 36 6.75 1 6.62	35 1.00 29 0.80 28 0.80 0 0.80 1 0.00 0.00	666	
HSDG 3L	3 1.88 1 0.79 9 0.70 6 0.04 6 0.65	9 1.66 3 6.79 6 6.66 2 6.78	5 1.66 7. 6.88 5 6.83 7 6.62 7 6.62	68 1.00 57 0.84 38 0.56 6 0.09 13 0.19	00000
NON-GRAD/GED 1 - 3U	2364 1.00 5433 1406 0.59 4301 1192 0.50 3799 91 0.04 236 123 0.05 266	21 1:00 169 11 0:52 133 0 0:00 0 11 0:52 131 0 0:00 2	87 1.00 296 64 0.74 259 60 0.69 247 2 0.02 5	125 1.00 73 0.58 61 0.49 3 6 0.05	4 0 - 4 0 - 4 0 0 0 0 0 0 0 0 0 0 0 0 0
HSD6 1 - 3U	1.00 0.11 0.05 0.06	121 1.00 96 0.79 0 0.00 96 0.79 0 0.00	419 1.00 358 0.85 344 0.82 5 0.01 9 0.02	605 1.00 516 0.85 458 0.76 34 0.06 24 0.04	121 1.00 102 0.84 89 0.74 2 0.02
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Indicates that it cannot be determined if the individual is rated in the rating that was guaranteed. These ratings are not included in the total: Overall survival rates are virtually identical when they are included, however.

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Entered 199 Survived 170 Aut and in same 166 Aut in same 2 Aut Rated 114 Survived 114 Survived 114 Aut in same 6 Aut fated 6 Aut Rated 6 Aut in same 108 Aut i		7.96 6.52 6.96 6.48	<u>~</u> + + •			
178 178		0.52 0.60 0.00	+ + 0 (1.00		99
Act for some 166 Not in some 2 Vot Rated 2 Survived 114 Sated in some 6 Act Rated 6 Survived 32 Act of n some 7 Survived 32 Act of n some 7 Act of n		6.06 6.06 6.04	+ 0 (9.40		99
Vot in same Vot Rated Entered Survived Vot in same Vot Rated Survived Vot Rated Vot Rated Vot in same Vot in sam		6.66 6.64	6	9.40	0	99.0
Vot Rated 146 Survived 114 Sated in same 108 Vot fin same 6 Vot Rated 6 Survived 32 Survived 32 Vot in same 1		0.04	•	9.00		99
Entered			5	9.60		0.00
Entered Survived 114 Suted in same 108 Act in same 6 Act Rated 6 Entered 32 Survived 72 Act in same 1 Act in same 1 Act in same 1						
Survived 114 Rated in same 108 Vot fin same 0 Aut Rated 6 Survived 32 Rated in same 29 Vot in same 1 Vot Rated 2		1.60	217	1.60		99
Acted in same 108 Act in same 6 Act Rated 6 Entered 32 Acted in same 29 Act in same 1 Act Rated 2	£	9.68	169	9.78	98	9.71
Vol for some Vol Rated Entered Survived Sated in some 1 Vol in same 1		9.64	+ + -	9.66		53
Cintered 44 Survived 32 Acted in some 29 Vot in some 1		9 0.00	٣	0.01		.05
Survived 32 Survived 32 Sated in same 29 Not in same 1 Not Rated 2	_	9 .0 4	22	0.10		2
Survived 32 Survived 32 Survived in same 29 Act in same 1 Act Rated 2		;		;		
Act in same 29 40t in same 1 40t Rated 2	9 4	9 9	21	9.60	- ч	90.5
Vot In same 1		9 6		- C - C - C - C - C - C - C - C - C - C		9 9
Not Rated 2		90.0		. e		9 6
		0.00	. –	0.05		8
100				1		
- 17	7	1.00		1.00		90
233		1.00		0.82		9
	*	0.57		0.55		99
Not in some 33 6.12	~	9.14	-	69.63	0	0.00
Vot Rated	7	0.29		9.18		90
Entered 551 1.00	9	1.00		1.00		90
440	_	6.58	189	9.80	-	1.00
ae 133	_	6.65		0.32		99
пе 265	"	0.47		0.34		00.0
Not Rated 42 0.08	_	0.05	33	9.14		8

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(Con
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		ישבר כ (כפווני)		
	HSDC	NHS	HSDG	HSDC
	1 - 30	1 - 30	31	4ABC
X				
Entered	_			
Survived		19 0.70		
Rated in same	9	14 0.52	7 0.70	00.00
		00.00		
Not Rated				0 0 0
Entered		93 1.66		
Dex - > 10	420 6.84		133 0.79	5 0.83
Koted in same				
Not in some	52 6.16	7 6.68	27 0.16	1 0.17
	9	9 .		1 6.17
700 NO. 100 NO	030 - 010	25 4 50	00.0000	90
		0.0	160 6.73	36.00 0.00
	6.63	9.00	2 6.61	
Delan lon		9		
Entered			12 1 98	4
Survived				
. Rated in same	184 6.72	34 0.62	8 6.67	
Not in some				
_		3 0.05	2 0.17	00.00
14				
Entered	34 1.88		1 1.00	00.00
Survived			1 1.00	
Rated in same .	00.00	00.00	9	00.00
Not in same			1 1.00	
Not Rated			00.00	
Entered	379 1.60			
Survived			108 0.82	
Rated in same .	99.99	9		00.00
Not in some		35 0.51	82 0.62	
Not Roted	38 6.16	10 0.14		2 0.25
Entered	-	-		
Survived	•	7 9 44	25. 4. 25	
Rated in some				
Not in some	11 8 13	- 65		99.0
Not Roted				
	•	>		

Indicates that it cannot be determined if the individual is rated in the rating that was guaranteed. These ratings are not included in the total. Overall survival rates are virtually identical when they are included, however.

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					TABLE	9	TABLE 6 (Cont.)						
		_	HSDG - 3U		z -	NHS - 3U	_		HSDG 3L		- 1	HSDG 4ABC	GO
3													
	Entered	1736	1.00		127	-	. 66	686	1.00	9	56	-	99
	Survived	1425	0.82		82	0.65	55	549	8	9	75	8.	-
	Roted in some	1372	0.79		79	0.62	25	507	9.74	*	99	0.00	9
	Not in some	52	0.01		-	0.01	=	=	0.02	. 2	, ro	0	20
	Not Rated	28	0.05		7	9	.02	28	9.04	•	*	9.04	3
Ξ		į	•		;		9	į					
	Entered	636	9.60		80	- 6	9 9	271	- 00	9	5 0	1.00	90
	00/1/200	200	80		9	9	99.	225	9.83	2	8 2	60	90
	Kated in some	4 98	6.79		22	9	.65	221	0.82	Ŋ	11	9.85	32
	Not in some	_	6.6		9	99.	9	m	9	=	0	6	9
5	Not Rated	n	9.00			0	10.	-	00.00	9	-	9	. 65
2			•		;		9						
	Entered	275	99		69	_	99.	148	- 60	•	7	_	8
	Survived	434	0.83		37	6	.54	123	83.	2	9	9.86	96
	Rated in some	339	65		54	0	33	20	9.55	ń	7	0	58
	Not in some	Ŧ	0.08		7	9	.10	23	9.16	9	7	0.29	5
	Not Rated	\$	9.19		9	9	60.	19	6.13	n	8	6	5
3				•							ı	,	1
	Entered	25	1.00		18	<u>-</u>	99	=	1.00	ō	7	-	9
	Survived	9	88.0		12	9.67	7:	=	1.00	9	-	0.50	20
	Rated in same	*	0.83		10	9.26	9	16	9.91	=	-	6	9
	Not in same	n	9.00		-	9	90.	0	9.00	9	0	99.	9
	Not Rated	•	9.00		_	9	90.	-	0.03	Ø	•	9	99
IS	į												
	Entered	‡	1.00		'n	-	90.	n	1.00	9	0	0	90
	Survived	115	9.89		-	6.33	23	7	9.67	7	0	6	8
		66	69.69		0	0.00	9	7	0.67	<i>L</i> :	0	00.0	00
	Not in some	ø	9.04		0	6	9	0	9.	9	9	9.00	90
3	Not Rated	9	0.07		_	6	.33	0	00.00	9	6	9	8
I	40.00	191	9		194		9			•	,	•	9
	Par and	280	. 4		2 4	. 4	2 -	0 5	9 6	9 9	2	- 6	9 6
	Roted to some	275	7.0		3 6	77	: 3	9 6	9 6	.	3 8	0.00	י פ
	Not in some	ð	. 4		4 4	9		9 9		3 5	9	9	2
		ט פ	3 6		•		2 !	9 ;	0.00	2	0	9.	g
3		מ	9.0		=	3	,	36	9.	20	50	•	_
ĺ	Entered	34	1 00		Œ	-	8	<u>+</u>	4	9	c		9
	Survived	28	76		7	9	84	2 4		• •	٠,	- 6	2 2
	Rated in some	2 5	2 6		,	9	90.5	2 5	00.0	5 r	- 6	9.0	2 6
	Not in a comp	; 6	9 6) -	,	٠ -	<u>.</u>		_ •	۰ و	9 6	9 9
		1 K	9 4		- 4	9 6	. .	۷ ۳	5.5	o (- (S	9
	79174 701	•	2		٥	9	99.	7	9	5	9	S	Š

	HSDC		HSDG	HSDG
	1 - 30	1 – 30	35 35	4ABC
Entered	195 1.00	24 1.00	58 1.86	6 1.00
Deviving				
•				
Not in some	12 6.66	9	_	00.00
Not Kated	7 6.64	2 0.08	4 0.07	1 0.17
		•	•	•
	400 4 40	61 0 49	756 1.66 543 9 33	99.1
Roted in some		, 0	9 6	9 9
Not in some			9 6	- 6
			6	
)	•
Entered	35 1.66	8 1.66	7 1.98	1 1.00
Survived	29 0.83			. 63
Rated in same	21 0.60	3.0.38	5 6.71	00.00
Not in same		1 0.13	1 0.14	
Not Rated		0		99.99
Entered		182 1.66	_	99.99
Survived			43 0.78	00.00
Rated in some			0	99.99
Not in some	21 0.02	4 0.02	0	0
Not Rated		11 0.06	1 0.02	00.00
	•	•		,
	30.1	99.1 7	4 ·	1.88
Rated to some a			99. q	99.1
Not in some	98.90		- (9.0
		9	9 9	- 6
)	
Entered		_		0 0 0
Survived		8 0.50	00.00	0
Rated in same	46 0.48	3 0.19	00.00	00.00
Not in same		4 0.25		
Not Rated		Φ		0
			ı	•
Entered	_	3 1.00	8 1.00	6 1.00
Survived	14 0.88	3 1.00	6 0.75	2 6.33
Rated in same	0		9	0
Not in some	9		Œ	9
			•	

Indicates that it cannot be determined if the individual is rated in the rating that was
guaranteed. These ratings are not included in the total. Overall survival rates
are virtually identical when they are included, however.

					TABLE	9	TABLE 6 (Cont.)						
Š													
	Entered	373	1.00		37	_	99	1-7	-	99		9	ě
	Survived	287	0.7		22	6	9	7	_	90			, 2
	Rated in same	254	9 .68		21	6.57	7	7	0.67	67		6	2
	Not in same	17	0.05		-	9	50	•	6	99			9
_	Not Rated	16	9.04		•	0	9	· -	9.33	33	S		2
			HSDG			SES.	<u>!</u>		HSDG	3 6		HSDG	٠,
		_	ا ع	_	-	ا ا	_		31	•		4ABC	
g.													
	Entered	7.3	1.00	_	13	1.00	90	51	_	90	19	1.00	8
	Survived	55	9.7		80	9	2	7	0	6.80	<u> </u>	0	
	Rated in some	54	9.74		80	0.62	25	4	9.78	78	±	9.74	
_	Not in some	-	9.91		•	0.00	9	-	0	0.02	9	0.00	8
	Not Rated	\$	99.	_	9	9	.00	0	9	.00	•	9	2
₹									,))	,		
	Entered	99	1.00	_	*	-	9	24	-	99	1-7	1.00	2
	Survived	‡	0.73		80	0.57	75	6		. 79	~	8	2
	Rated in same	39	6.65		9	0.43	2	9	0	.67	-	6	
	Not in some	7	0.03		-	0.07	71	m	6	6.13	-	9	
	Not Rated	m	9.05		-	6	76	0	0	99	•	8	2
₹								•)	•	;	
	Entered	1045	1.00	_	142	-	9	619		99	+	-	8
	Survived	820	9.78		75	0.53	53	538	0	6.79	102	9.71	=
_	Rated in same	763	0.73		67	9.47	7	495	6	0.73	88	9.61	~
_	Not in some	58	0.03		n	0.65	2	±	0	. 02	*	9.93	2
-	Not Rated	58	0.03		S	9	*	59	6	* 0.	10	0	5
2													
	Entered	92	1.00		r	1.00	9	10	_	1.00	-	1.00	8
	Survived	6	9.70	_	0	0.00	90	7	0	0.70	0	9.00	8
_	Rated in some	57	0.62		0	9	9	7	0	92	0	9.	8
-	Not in some	-	0.0		0	00.0	9	60	00.00	90	0	90.0	2
	Not Rated	9	0.07		0	0	9	0	0	90	0	9.	8
'n	Entered	232	9		73	-	8	200	-	ď	ģ	-	2
- •	Survived	160	9 6		. F.	67	9	£ 5.	7, 4	92	2 4	- 6	9
	Rated in same	154	9.66		32	. 6	2 4	157	9 6	, K	ם ער	9 6	3 9
_	Not in some	*	0.0		-	0.01	: =	G	6	9	S	9 6	5
	Not Rated	8	9.0		7	0	12	-	6	99	- (9	3
×		ı			l		ì	•		}	-	;	•
-	Entered	909	- 00		83	1.00	9	4	_	. 60	0	9.	8
	Peviving	472	. Y		∓	0.49	9	36	0	96.9	0	9.00	8
	Rated in same	448	6.7		36	0.43	<u>17</u>	5	6	78	0	9.	8
	Not in some	9	9.05		-	9.0	=	-	ø.	. 63	0	0.00	8
	Not Rated	±	0		*	9	. 05	*	ó	. 10	•	9.	ğ

		TAULE 6 (Cont.)		
	HSDG	SHN	HSDC	HSDG
	J J.	1 - 30	31	4ABC
35				
		121 1.00		9
Survived	149 0.70	63 0.52	15 6.75	
Rated in same			13 0.65	
Not in same	8 6.64	2 0.02		
Not Rated		7 0.06	1 0.05	99.99
STG				
Entered	327 1.00			00.00
		30 0.68	15 0.88	00.00
Rated in some				
Not in some	23 0.07	2 0.05		
Not Rated				
STS				
Entered		6 1.60	1 1,00	8
Survived	18 0.82	2 6.33	1 100	
Rated in some		1 0.17	1 00	
Not in some	7 0.32	00.00	99 9	
Not Rated	1 0.05	1 0.17	8 8 8	90.00
10)	3
Entered	91 1.00		2 1.66	8 8 8
Survived			1 0.50	00.00
Roted in some			1 6.56	99 9
Not in some	32 0.35	6 0.30	00.0	99 9
Not Rated			99.99	00.00
1				
Entered	41 1.00			_
Survived	31 0.76		18 0.86	2 1.00
Rated in some	28 0.68	6 6.46	16 0.76	2 1.00
Not in same				
Not Rated	2 6.65		2 0.10	00.00
Entered	93. 1.66			
Dev ving	_	3 0.27	29 0.91	
Kated in same .	•	9		
Not in some	66 0.71	2 0.18		
Not Rated	0	0		
TMT				
Entered	168 1.00	12 1.66		
Pevi ving				98.99
Rated in same .		99.9		00.0
Not in some	106 0.63	0		
Not Rated		0	6 6.11	- 0

Indicates that it connot be determined if the individual is rated in the rating that was
guaranteed. These ratings are not included in the total. Overall survival rates
are virtually identical when they are included, however.

TABLE 6 (Cont.)	NHS HSDG HSDG 1 - 3U 3L 4ABC	62 1.00 268 1.00 49 1.00 31 0.50 211 0.79 39 0.80 24 0.39 202 0.75 33 0.67 1 0.02 5 0.04 6 0.10 4 0.01
	HSDG 1 - 3U	604 1.00 483 6.80 458 6.76 13 6.62 12 6.62
		YN Entered Survived Rated in same Not in same Not Rated

TABLE 7

SURVIVAL AND ADVANCEMENT RATES, SIX-YEAR OBLIGATION (At 30 Months), FY 1983

Education	HSDG	NON-GRAD/GED	HSDG
Mental Group	1 – 30	1 - 30	31
TOTAL			
Entered	6634 1.00	438 1.88	
Survived	0	6	112 0.86
Rated in same	4606 0.69	0	78 6.60
Not in some	792 0.12		
Not Rated		18 0.04	
RATING			
QV.			
		33 1.60	18 1.00
Survived	274 0.85	9	
Rated in some		22 0.67	9 0.20
	0	•	1 0.06
Not Rated	9 6.63		3 0.17
	•	•	
Entered			15 1.00
Dex : >1.30		26 0.72	
ě	0		6
	27 0.04		6
Not Rated	10 0.01	1 0.03	99.99
AA AA AA AA	1 991	F +	9
Survived	- @		99.0
Rated in same		0	
Not in some	0	00.00	00.00
Not Rated		_	6
	510 1.68	66 1.68	2 1.00
59A A 150	9 6	9 0	
	9	9	
Not In school	•	0 0 0	-
Not Rated	4.00.00		99.99
M 1	•	•	•
Entered		- '	
00/1/10		9	17 6.89
80 C - D0	si o		13 0.68
	•	6	4 0.21
Not Rated	12 0.04	1 0.10	

		TABLE	7	(Cont.)		
SU						
	489	1 80	3		-	9
Survived	421	•	7 5	99	- 6	
Roted in some	336	69	: 2	8	9 6	3 4
in some	69	41.0	. w	9		7
Rated	9	0.03	, PC	60	6	
ET	•		•			
Entered	2234		134	1.00		
Survived	1961	6.85	88	99.0	34 0	88
Rated in some	1313		800	0.43		
•	455		23	0 17		•
Not	133	90.0	7	0.05	9 6	. 18
EW						
Entered	230		22	1.00	8	
Survived	199	6.87	15	9.68	_	.88
Rated in same	184	9.80	*	9.64		75
-	=	0.05	-	0.05	-	. 13
Zo Zo	*	0.02	0	0.00	0	.00
E1						
Entered	1078	1.00	28	1.00	34	
Survived	919	6.85	38	9.66		.88
•	•	00.00	0	9.00	0	. 00
	878		38	99.0	_	. 79
Not Rated	7	•	Ø	9.00	8	69.
GS						
Entered	**	1.00	₽	1.00	22 1	99
Survived	376	6.85	33	6.77	Φ	
Rated in same	•	9.00	0	9.00	0	.00
=	363	0.82	33	0.77	0	. 86
Not Rated	13	•	0	9.00	-	
	298	1 99	c	90	6	9
Survived	269		•		_	•
Rated in same	268	96.90	•	0.00	. 60	99
Not in same	-	•	0	00.0	_	
Not	•	•	9	•	9	
둗						
Entered		•	80	1.00	0	. 98
Survived	71	•	~	9.22	0	. 60
Õ	7	•	7	0.22	0	.00
	•	9.00	0	90.0	60	. 88
Not Rated	•	•	6	9.00		. 00

TABLE 7 (Cont.)

2								
Entered	188	1.00	<u>*</u>	1.00	-	_	99	
Survived	166	9.88	o	0.64	-	_	90	
Rated in same	146	0.78	9	0.43	-	1.00	90	
Not in some	17	69.69	8	0.14	9	6	99	
Not Rated	n	0.02	-	6.67	0	0	99	
01								
Entered	20	1.00	0	0.00	-	-	90	
Survived	17	6.65	9	90.00	-	_	1.00	
Rated in same .	9	6 .66	0	9.00	0	0	90	
Not in some	16	6.80	9	99.00	-	_	9	
Not Rated	-	0.05	•	99.9	9	6	8	
2								
Entered	305	1.00	79	1.00	8	_	90	
Survived	238	0.78	10	0.50	_	0	20	
Rated in same	222	0.73	œ	0.40	-	9.50	20	
Not in some	<u>*</u>	0.05	_	6.65	•	0	99	
Not Rated	7	0.01	-	6.65	•	0	99	
STG					•			
Entered	276	1.00	17	1.80	σ0	-	99	
Survived	224	9.81	=	6.65	7	6	88.0	
Rated in same	207	0.75	Ø	0.53	7	6	88	
Not in some	17	90.0	~	0.12	6	•	96	
Not Rated	9	9 .00	0	98 9	9	6	99	
STS								
Entered	477	1.86	31	1.00	12		99	
Survived	385	6.81	13	0.48	=	6	92	
Rated in same	313	99.0	10	0.32	80	6	6.67	
Not in same	62	8 .13	۳)	9.10	n	6	25	
Not Rated	10	0.02	7	90.0	9	6	96	

• Indicates that it cannot be determined if the individual is rated in the rating that was guaranteed. These ratings are not included in the total calculations.

Survival rates are not solely a function of A-school performance. Analysis of survival of all 1983 entrants through four months, just after completion of recruit training, found that recruits with four- and five-year obligations had already experienced 8-percent attrition. Close to half of the attrition in the first 30 months occurs before the beginning of A-school, and some of the later attrition is among personnel who have successfully completed A-school.

About 5 percent of recruits with four- and five-year obligations who entered the Navy in 1983 with a specific school guarantee earned another rating, and about an equal proportion ended up not rated. Although the magnitude of the differences is small, recruits from the higher mental groups are more likely to qualify in in another rating and less likely to be nonrated after 30 months.

Table 7 provides similar results for recruits in the AEF and ATF programs. The proportion of recruits not rated is somewhat smaller than those shown in table 6. The proportion who earn a rating other than the one promised is more than twice as high. This result is consistent with a pattern of recruits who fail for academic reasons in the most difficult pipelines being reassigned to less technical pipelines.

Table 8 provides descriptive statistics of the variables in tables 6 and 7 for all the ratings. The average 30-month survival rate is 78 percent for ratings with four- and five-year obligations and over 83 percent for the ratings with a six-year obligation. Both groups reveal substantial differences across individual ratings as well as within a rating across quality groups. In the Electricians Mate (EM) rating, for example, 10 percent of upper-mental-group HSDGs end up in other ratings. The comparable number for the Aviation Electrician's Mate (AE) rating is 6 percent. In both cases, the proportion is higher for recruits from lower mental groups. Hull Technician (HT) recruits, in contrast, are unlikely to end up in another rating. These results are at least consistent with A-school attrition rates.

TABLE 8
DESCRIPTIVE STATISTICS OF VARIABLES

	Number of observations	Mean	Standard deviation	Min.	Max.
Four- or five-year obligation Percent survive Percent rated in same Percent rated different Percent not rated	67 62 62 67	78.3 66.8 8.1 3.5	5.3 11.5 8.5 2.4	61.0 26.0 0.0 0.0	88.0 87.0 47.0 10.0
Six-year obligation Percent survive Percent rated in same Percent rated different Percent not rated	17 14 14 17	83.5 72.9 8.3 2.5	3.6 9.0 6.8 1.8	76.0 58.0 0.0 0.0	90.0 89.0 21.0 6.0

For a sample of ratings analyzed in [1], table 9 compares FY 1983 A-school attrition and the proportion who earn a rating other than the one promised. The academic and nonacademic portions of A-school attrition are also shown. The average attrition for these ratings is 18 percent. The average number of recruits who earn a rating other than the one promised is roughly equal to one-half of the A-school attrition rate for those ratings. The correlation between the two measures across the 20 ratings for which both were available is high. A complete examination of the success of recruits who are reclassified after A-school attrition requires analysis of reclassification and subsequent survival and advancement rates for a broad range of ratings and would need to trace individuals to understand the complete process.

TABLE 9

COMPARISON OF A-SCHOOL ATTRITION AND PROPORTION NOT RATED IN SAME

	Proportion	A-school attrition rates ^a			
not rated Rating in same		<u>Total</u>	Academic	Nonacademic	
AC AE AQ AQ6 AT AT6 BT6 CTM DS EM EO ET6 EW EW6 HM MM MS OS RM SK	0.23 0.07 0.12 0.11 0.05 0.04 0.02 0.21 0.15 0.14 0.03 0.20 0.09 0.05 0.02 0.05 0.01 0.03 0.03	0.35 0.22 0.22 0.27 0.15 0.18 0.17 0.19 0.26 0.31 0.03 0.47 0.17 0.19 0.04 0.30 0.02 0.06 0.13 0.08	0.25 0.13 0.13 0.17 0.06 0.07 0.08 0.13 0.22 0.00 0.18 0.07 0.08 0.01 0.09 0.01	0.10 0.09 0.09 0.10 0.09 0.11 0.13 0.09 0.03 0.29 0.10 0.11 0.03 0.11 0.03 0.09	
Average	0.08	0.19	0.10	0.09	
Standard deviation	0.07	0.12	0.07	0.06	
Correlation coefficient ^b		0.76 ^c	0.73 ^c	0.60°	

a. The A-school attrition rates are from [1].

b. The correlation coefficients are between the attrition rates and the proportion not rated in the same rating (column 2).

c. Significant at the .01 level.

SUMMARY

This research memorandum examined preliminary evidence on the reasons for A-school attrition and on subsequent success. The analysis indicated that about half of A-school attrition is for academic reasons and that this proportion has been increasing in recent years. Most of the nonacademic attrition is the result of motivation or disciplinary problems. Among students who leave A-school prematurely, less than 10 percent are recommended for discharge, 25 percent are reclassified for another rating, and the remainder return to the fleet.

The progress of recruits in 1983 was also examined. The data indicate that a significant proportion of recruits eventually earn ratings other than the ones they were originally promised. The patterns across ratings and entry programs indicate that students who fail to complete an A-school course are reclassified to other pipelines, but more detailed analyses are necessary to evaluate the success of those recruits.

REFERENCES

- [1] CNA Research Memorandum 88-76, The Role of Student Quality on A-School Training Attrition: Trends in Selected Ratings, by Patricia E, Byrnes, Alan J. Marcus, and Janet E. Thomason, Jul 1988 (27880076)
- [2] CNA Research Memorandum 88-46, A Guide to CNA Individual Training Data Sets, by Patricia E. Byrnes et al., Mar 1987 (27870046)
- [3] Management Information and Instructional Systems Activity (MIISA) Report No. 23UM8402, NITRAS: Student Master File (SMF) Users Manual, Oct 1984

^{1.} The numbers in parentheses are internal CNA control numbers.

APPENDIX

DESCRIPTION OF NITRAS STUDENT ACTION CODES

APPENDIX

DESCRIPTION OF NITRAS STUDENT ACTION CODES

The following pages were taken from Management Information and Instructional Systems Activity (MIISA) Report No. 23UM8402, NITRAS: Student Master File (SMF) Users Manual, Oct 1984.

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E.2.8 Attrition

(Termination)

The attrition student action codes are K and L. They are used to indicate a student's unsuccessful completion of a course, either for academic or non-academic reasons.

Whenever a student attrites, he is automatically disenrolled from the class, unless he is held onboard in a hold status awaiting transfer or discharge. In that case, an R_{\perp} code must be submitted the day following the event date of the attrite code.

Attrition student action codes are somewhat different from the other codes in that both the reason for attrition and the anticipated disposition of the student is specified.

Example: When a K or L code is submitted by the training activity, the anticipted disposition may be the "recommendation of an academic review board to re-assign the student to another school," but higher authority (NMPC) determines that the student should be transferred to the fleet. The final disposition is then reflected whenever he is released from the hold status by an S code.

Figures E-01 and E-02 provide listings of academic and non-academic attrite codes. The definitions of academic and non-academic attrites follow.

OTHER USAGE. Student Action Codes of K and L may also be used to release a student from a hold status (C4, CD4, CE4) due to interruption of instruction.

The L__ code (non-academic attrite) is used to release a student from a hold preventing enrollment (CA3, CB3, C1_, C2, C3_).

NOTE: The L__ code must be used because the student has never entered class to receive academic instruction.

SUMMARY. The following student action codes may be reported following a K or L transaction (with the exception of LUR—final disposition for a deserter).

R_RA3

See sample submissions on Figure R-05.

DEFINITIONS OF THE ATTRITE SUB-CATEGORIES

1. ACADEMIC ATTRITES - K Codes

- A. Classroom Inability Attrition is the result of classroom failure. Student cannot achieve academic objectives and pass criterion tests. Classroom inability can be documented by student test scores and/or time in course.
- 1. Lack of Fundamental Knowledge/Prerequisite Skills KAA Student lacks fundamental knowledge in subject area or necessary prerequisite skills to commence with course materials without extensive and/or lengthy remediation. Such a lack of skills/knowledge is documented by course pre-tests of entry level behaviors, and by counseling and remediation actions.
- 2. Lack of Analytical Ability/Logic Student displays KAK poor ability to analyze, reason, and react logically in classroom situations requiring these skills. Student cannot be reasonably KAM remediated to required level of proficiency.
- B. <u>Laboratory Tnability</u> Attrition is the result of laboratory or shop failure. Student cannot achieve the shop or laboratory performance objectives and pass the criterion tests. Laboratory inability can be documented by student performance scores and/or time in course.
- 1. Lack of Manual Skills/Dexterity in the use of Tools
 and Test Equipment Student is awkard/clumsy as documented
 in laboratory or shop performance tests. Student cannot be
 reasonably remediated to required level of proficiency.

 KCD
 KCE
- 2. Lack of Knowledge Application Student demonstrates KCK an inability to transfer classroom information such as maintenance or troubleshooting procedures to laboratory or shop assignments/ KCM procedures.
- C. Other Any other academic reason for attrition not KEA covered above. Reason must be stated on Academic Review Board KEB recommendation.

	ACADEMIC ATTRITES	Reassigned/ Transferred	Discharged/ Separated	Reclassified
CLASSROOM Inability	Lack of Fundamental Knowledge/ Prerequisite Skills	KAA	KAB	KAC
ರ ₹	Lack of Analytical Ability/Logic	KAK	KAL	KAM
LABORATORY INABILITY	Lack of Manual Skills/Dexterity in Use of Tools & Test Equipment	KCD	KCE	KCF
LAB	Lack of Knowledge Application	KCK	KCL	KCM
	Other	KEA	KEB	KEC

ACADEMIC ATTRITES

Figure E-01

II. NON-ACADEMIC ATTRITES - L Codes

A. Lack of Motivation	- Attrition is due to student
disinterest in training or	unwillingness to perform, not to
student inability.	

1. Negative Navy/Military Attitude - Student displays	LGA
lack of interest in Navy or military as an occupational field.	LGB
All reasonable/feasible counseling and remedial measures have	rec
failed to correct this lack of motivation.	

- 2. Negative School/Training Attitude Student displays LGD lack of interest in technical school training and expresses a LGE preference for a work assignment. LGF
- 3. Negative Attitude Toward This School/Course Student LGG has voiced a preference for or requested another school, rating or career field. Student's performance in training supports this LGJ decision for attrition.
- B. Eligibility Requirements Attrition is the result of student ineligibility for school/course/program. The student fails to meet school/course/program prerequisites.
- 1. Does Not Meet Physical Prerequisites for Service LJD Field, Rating or Specialty Training Student does not meet LJE specific physical requirements for training such as weight, LJF height, strength, physical condition, etc.
- C. <u>Disciplinary</u> Attrition is the result of a disciplinary offense on the part of the student.
- 1. Alleged Civil/Military Crime Student accused or Convicted of a civil or military crime and/or held by civil/ LLE military authorities.
- 2. <u>Habitual Offender</u> Student who has had a series of LLK offenses (civil and/or military) and who evidences incorrigibility. LLL LLM

3. <u>Declared Deserter</u>

LUR

- D. Administrative Attrition is the result of some administrative action which removes the student from a particular training status.
- 1. Alcohol/Drug Rehabilitation Student referred for LNA rehabilitation for an alcohol or drug problem. Referral would be documented by counseling and medical records.

- 2. Rating or Program Conversion Transfer from LND school/course due to overmanning of rating or rate, the phase-out LNF of a rating, changes from one program to another (e.g., 4- to 6-year enlistments) and/or pipeline change.
- 3. <u>Unsuitability</u> Student has been determined to be unsuitable for military service. Such a determination is not made by school or course personnel, but by other authority.
- 4. Incomplete Training as Requested by Member's Command/
 Higher Authority Student is unable to complete course of
 Instruction due to changes in orders, duties, assignments, etc.
 Such changes are administrative decisions made at the convenience of the student's superiors and are not due to student ability or achievement.
- E. <u>Medical</u> Attrition is the result of medical action which makes the student unable or ineligible to continue in his present training status.
- 1. Pregnancy Student attrited from course due to LQA pregnancy. LQB LQC
- 2. Other Medical Student attrited from course for LQN medical reason other than pregnancy. LQP LQQ
 - F. Death LSB
- G. Other Any non-academic reason for attrition not LZA covered above. Reason must be stated on Academic Review Board LZB recommendation.

III. ANTICIPATED DISPOSITION

- A. Reclassified/To Another School/Course After attriting, student is referred for reclassification and assignment to another school or course.
- B. Reassigned/Made Available to Fleet After attriting, student is made available for reassignment to fleet duty.
- C. <u>Discharged/Separated from Navy</u> After attriting, student is recommended for separation from the Navy.

	NON-ACADEMIC ATTRITES	Reassigned/ Transferred	Discharged/ Separated	Reclassified
HOTIVATION	Negative Navy/Military Attitude Negative School/Training Attitude Negative Attitude Toward This School/Course	LGA LGD LGG	LGB LGE LGH	LGC LGF
ELIG/ Reqmt	Does Not Meet Physical Prerequisites for Service Field, Rating or Specialty Training	LJD	LJE	LJF
DISCIPLINARY	Alleged Civil/Military Crime	LLD	LLE	LLF LLM LUR
ADMINISTRATIVE	Alcohol/Drug Rehabilitation	LNA LND	LNB	LNC
MEDI CAL /	Command/Higher Authority	LNX LQA LQN	LNY LQB LQP	LNZ LQC LQQ
	Death	LZA	LSB	LZC

NON-ACADEMIC ATTRITES

Figure E-02